Claims

1. Method for the transmission of at least one first and second data signal (ds1, ds2) in polarization multiplex in an optical transmission system (OTS), by which

- in a first step at the transmitting end the first data signal (ds1) is modulated onto a sideband (SB1) of a first carrier signal (ts) to generate a first sideband modulated signal (ms1) and the second data signal (ds2) is modulated onto a sideband (SB2) of a second carrier signal (ts) to generate a second sideband modulated signal (ms2),
- in a second step, the first and second sideband modulated signals (ms1, ms2) are polarized orthogonally to each other, and are combined into one optical multiplex signal (oms) and transmitted,
- in a third step, at the receiving end, the optical multiplex signal (oms) is fed via a polarization control element (PTF) to a polarization splitter (PBS) which separates out the optically multiplexed signal (oms) which was transmitted into the first and second modulated signals (ms1, ms2),
- in a fourth step, the first sideband modulated signal (ms1) is converted to a first electrical signal (es1) and/or the second sideband modulated signal (ms2) is converted to a second electrical signal (es2),
- in a fifth step, the first and/or the second electrical signal (es1, es2) is analyzed and, dependent on it, at least one control signal (rs) is derived for the purpose of controlling the polarization control element (PTF).

2. Method according to Claim 1
characterized in that
the sideband modulation takes the form of single sideband modulation or vestigial sideband modulation.

3. Method according to Claim 1 or 2,
characterized in that
for a second carrier signal (ts2) which differs from the first carrier

signal (ts1) by a differential frequency (Δf) the spectral component of the first and/or the second electrical signal (es1, es2) is determined at the differential frequency (Δf) for the purpose of analyzing the first and/or the second electrical signal (es1, es2).

4. Method according to Claim 3,
characterized in that
the amplitude (P) of the first and/or the second electrical signal (es1, es2) is controlled to a minimum (MIN_1, MIN_2) at the differential frequency (Δf).

5. Method according to Claim 3 or 4,
characterized in that
the value chosen for the differential frequency (Δf) is greater than one Gigaherz.

6. Method according to one of the Claims 1 to 5,
characterized in that
the first or second sideband modulated signal (ms1, ms2) is delayed at the transmitting end for the purpose of decorrelation.

7. Method according to one of the Claims 1 to 6,
characterized in that
for the purpose of distinguishing the first and second electrical signals (es1, es2), at least one pilot tone signal is superimposed at the transmitting end on the first and/or the second carrier signal (ts1, ts2) or sideband modulated signal (ms1, ms2).

8. Method according to one of the Claims 1 to 6,
characterized in that
for the purpose of distinguishing the first and second electrical signals (es1, es2) the first and second data signals (ds1, ds2) are transmitted at different bit transmission rates.

9. Method according to one of the Claims 1 to 6,

characterized in that
for the purpose of distinguishing the first and second electrical signals (es1, es2) the first and second data signals (ds1, ds2) are transmitted in different data formats.

10. Method according to one of the Claims 1 to 9,
characterized in that
the optical transmission system (OTS) is operated in wavelength multiplex mode (WDM).